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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/692,112	SHACKLETON ET AL.	
	Examiner	Art Unit	
	Michael C. Colucci	2609	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-17 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-17 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 8 and 17 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 8 references "symbol type list", "state interface", "state lookup table", and "object list" without further description within the specification. Without reference to the terms within the specification the function of the method and apparatus within the claims is not conveyed reasonably.

Claim 17 references "number handling" and "missing object". Without reference to the terms within the specification the function of the method and apparatus within the claims is not conveyed reasonably.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in **Graham v. John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966)**, that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows: **(See MPEP Ch. 2141)**

a. Determining the scope and contents of the prior art;
b. Ascertaining the differences between the prior art and the claims in issue;
c. Resolving the level of ordinary skill in the pertinent art; and
d. Evaluating evidence of secondary considerations for indicating obviousness or nonobviousness.

4. Claims 1, 4, 12, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horiguchi et al (herein after "Hori") US 6,330,530 in view of Weise, U.S. PGPUB 20030083861 A1.

Re claim 1, Hori discloses a natural language parser for accepting language input and producing a constrained language output (figs. 1, 2A), comprising:

an input configured to accept user input elements from a user interface

- *Hori discloses a natural language processing system that receives input sentences, (Hori Col. 1 line 50-59). Hori teaches a system that semantically understands input words and creates an output sentence, (Hori Col. 1 line 66 – Col. 2 line 4). Hori teaches a parser that uses knowledge about a word and word meaning as well as a set of rules defining legal structures, (Hori Col. 1 line 50-59). In Hori, the set of rules defining legal structures effectively "constrain" a language output.*

comprising one or more of words, partial words, numbers, language symbols, and a send command;

- *Hori also discloses a processor that syntactically determines the type of words and lexically separates them, (Hori Col. 1 line 66 – Col. 2 line 7). Hori discloses a morphological module that utilizes a dictionary to identify parts of a sentence and to create a structure for words within the sentence. Hori discloses data within the structure to be strings, symbols, and numbers. Hori defines the data within the structure to be words. (Hori Col. 6 line 16-27).*

an output configured to output completed syntactically correct parsed output strings to an external system;

- *Hori discloses output devices such as an audio speaker, which is well known and expected to exist within a natural language processing system as claimed (Hori Col. 5 line 10-21).*

a symbol table that is structured according to a hierarchical object model comprising multiple symbol objects representing possible valid user input elements, the symbol objects being based on an object-oriented-based hierarchical structure, wherein mapped symbol objects are mapped to the user input elements based on corresponding symbol objects of the symbol table and syntactic *rules;*

- *Hori discloses a context-free grammar of a language consisting of a set of various vocabularies and rules (Hori Col. 1 line 31-49). Terminal symbols are*

also present within these vocabularies, (Hori Col. 1 line 60-65). Hori teaches the use of a semantic grammar rule (Hori Col. 1 line 65 – Col. 2 line 8). Hori also discloses the mapping of features of a word to find a match for strings, symbols, and numbers. (Hori Col. 4 line 8 – 11). Hori discloses the use of a dictionary and a thesaurus in combination with syntactical analysis to create output text, (Hori Col. 8 line 49-56). A symbol table is general as to be construed as a dictionary (Hori Col. 6 line 16-27).

a grammar information and state table comprising: multiple grammar output objects representing legal statements that may be used with the external system,

- *Hori discloses the output of languages that are syntactically and semantically checked and the mapping of symbols to a vocabulary data set, (Hori Col. 1 line 31-49). In Hori, it is well known to have a set of constraints such as a dictionary that only allow legal statements relative to a linguistic system to be processed. Hori discloses a set of rules defining legal structures. (Hori Col. 1 line 55-59).*

the natural language parser further comprising; a translator comprising a translation table having an output object to output string mapping, the translator configured to combine information from the translation table and the output object to produce the parsed output strings.

- *Hori disclose references to symbol data sets, syntactic rules, semantic rules, and the mapping of input to preexisting data. Hori does not specifically state the use*

of a translation table. However, Hori does disclose the use of a source language dictionary to decompose words into morphemes. Examiner takes Official Notice that a translation table is notoriously well known and used in the art and thus, would have been obvious and necessary in order for proper parsing. The language system has the ability to translate between multiple languages simultaneously, (Hori Col.6 line 10-26). Based on the prior art, the system taught by Hori is both functionally equivalent and equally effective.

the grammar information and state table providing a rigid set of constraints for the completed parsed output strings and disallowing syntactically incorrect strings, the grammar information and state table being utilized to create mapped output objects based on one or more of the mapped symbol objects in the hierarchically structured symbol table based on semantic rules, the grammar information and state table interacting with the symbol table to disallow syntactically incorrect user input elements; and a state table configured to reflect a state of a particular output as it is progressively entered by the user;

- *Grammar information is broad and will be taken to mean any information pertaining to semantic, syntactic, morphological, etc., (Hori Col. 1 line 31-59). Hori does not specifically disclose the use of a state table in addition to the interaction of the semantic check, syntactic check, and mapping processes. A state table describes the possible execution routes that a program will take or the input and output states of a system but does not exist in table form within a*

system unless discretely created. The state table can take various forms (e.g. one or two dimensional) but the true execution paths of a program would not exist without the presence of a state table. When read in light of the specification, a state table is broad enough as to be construed as part of a parsing table, which is well known in the art. However, Hori fails to disclose the use of a state table. However Weise teaches a state table that depicts the promotion of data amongst states where the state table continues to grow via a nodal addition of data, (Weise Col. 17 line 34-47). It is necessary for the grammar information within a natural language process to interact with the databases, lookup tables, and/or dictionaries available. Therefore, the combined teaching of Hori and Weise would have rendered obvious a state table that keeps an updated nodal data structure as input and output fluctuate.

Re claim 4, the parser according to claim 1, wherein the grammar information and state table comprises word types that include one or more of verbs, prepositions and adjectives.

- *Hori discloses the use of noun and verb phrases to structure an English sentence. Since data within a source language dictionary is being compared to input data, they will have matching characteristics (i.e. verb, noun, adjective). Types of words disclosed by Hori also included adjectives. When read in light of the specification, a preposition is broad as to be construed as a necessity within a sentence if a verb and/or noun can be identified. A preposition is used to relate*

nouns to other parts of a sentence. (Hori Col. 5 line 56-64, Col. 14 line 14-24). Based on the prior art, the system taught by Hori is both functionally equivalent and equally effective.

Re claim 12, A method for parsing a user-supplied language input and providing a parsed output for an external system, comprising:

providing a natural language parser comprising a user input that accepts user input elements from a user via a user interface, the parser further comprising an output that outputs parsed output strings to an external system;

- *Hori discloses a natural language processing system that receives input sentences, (Hori Col. 1 line 50-59). Hori also discloses a processor that syntactically determines the type of words and lexically separates them, (Hori Col. 1 line 66 – Col. 2 line 7). An audio speaker is a type of external system, (Hori Col. 5 line 10-21).*

building a symbol table that is part of the parser according to a hierarchical object model structure by entering into the symbol table symbol objects that correspond to valid user input elements and include symbol object type information;

- *Hori discloses a morphological module that utilizes a dictionary to identify parts of a sentence and to create a structure for words within the sentence. For identified pairs, Hori discloses data within the structure to be strings, symbols, and*

numbers, (Hori Col. 6 line 16-27). Hori also discloses a starting symbol for production.). The starting symbol is where a data tree is created. Hori discloses a context-free grammar of a language consisting of a set of various vocabularies and rules. Terminal symbols are also present within these vocabularies. Hori also discloses the mapping of features of a word to find a match for strings, symbols, and numbers. The teaching of the use of a dictionary and a thesaurus in combination with syntactical analysis to create output text. A symbol table is general as to be construed as a dictionary. (Hori Col. 8 line 49-56 and 19 Col. 6 line 16-27).

building a grammar information and state table by providing multiple grammar output objects that correspond to valid parsed output strings of the external system;

- *Validity of an output is accomplished through the grammar rules taught, i.e. syntactic, semantic, and morphological analyses applied to the input by the user(s), (Hori Col.1 line 32-50).*

building a translator by providing output strings corresponding to the command objects;

entering user input elements into the user input by a user;

- *Hori discloses the output of languages that are syntactically and semantically checked and the mapping of symbols to a vocabulary data set, (Hori abstract).*

converting the user input elements into mapped symbol objects corresponding to the user input elements utilizing the symbol table and syntactic rules;

converting one or more of the mapped symbol objects into a corresponding mapped output object utilizing the grammar information and state table and based on semantic rules, and updating a state of a mapped output object in the state table;

- *Grammar information is broad and will be taken to mean any information pertaining to semantic, syntactic, morphological, etc., (Hori Col. 1 line 31-59). Hori does not specifically disclose the use of a state table in addition to the interaction of the semantic check, syntactic check, and mapping processes. A state table describes the possible execution routes that a program will take or the input and output states of a system but does not exist in table form within a system unless discretely created. The state table can take various forms (e.g. one or two dimensional) but the true execution paths of a program would not exist without the presence of a state table. When read in light of the specification, a state table is broad enough as to be construed as part of a parsing table, which is well known in the art. However, Hori fails to disclose the use of a state table. However Weise teaches a state table that depicts the promotion of data amongst states where the state table continues to grow via a nodal addition of data, (Weise Col. 17 line 34-47). It is necessary for the grammar information within a natural language process to interact with the databases, lookup tables, and/or dictionaries available. Therefore, the combined teaching of Hori and Weise would*

have rendered obvious a state table that keeps an updated nodal data structure as input and output fluctuate.

constraining user input elements as they are being entered by checking the grammar and information state table, the symbol table, the syntactic rules, and the semantic rules, and providing information back to assist the user in entering proper user input elements;

receiving a send command as a user input element;

- *In addition to the above state table analysis, a symbol table (dictionary) and semantic and syntactic knowledge bases are present to assist the user with transforming possibly incorrect input into valid output, (Hori Col.1 line 32-50).*

translating, in response to receiving the send command, the mapped output object into a corresponding parsed output string utilizing the translator; and

sending the parsed output string to the external system.

- *Hori disclose references to symbol data sets, syntactic rules, semantic rules, and the mapping of input to preexisting data. Hori does not specifically state the use of a translation table. Hori discloses the use of a source language dictionary to decompose words into morphemes, (Hori Col. 6 line 16-27). The language system has the ability to translate between multiple languages simultaneously, (Hori Col.6 line 10-26). Based on the prior art, the system taught by Hori is both functionally equivalent and equally effective.*

Re claim 14, The method according to claim 12, wherein building the grammar information and state table comprises identifying a comprehensive set of output strings for the external system, entering the command strings into a rule file in their general form, parameter, and list of possible prepositional phrases, and the permutations of the rules into all possible orderings.

- *When read in light of the specification, a rule file is broad as to be construed as an index in memory where a group of various grammar rules is applied. Hori discloses a system that exhibits a morphological, syntactic, and semantic understanding. A prepositional phrase is broad as to be construed as part of general sentence, as a preposition associates phrases to other words within a sentence, (Hori Col.1 line 43-49). Transfer and grammar rules exist that examine the string and pattern of a user input. (Hori Col. 1 line 32-49, Col. 2 line 8 –19). Based on the prior art, the system taught by Hori is both functionally equivalent and equally effective.*

5. Claims 2-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horiguchi et al (herein after "Hori") US 6,330,530 in view of Weise as applied to claim 1 above and further in view of White et al U.S. PGPUB 20030023740 A1.

Re claim 2, the parser according to claim 1, wherein:

the external system is a controller for at least one of a vehicle, a machine, and a system.

- *The combination of Hori and Weise disclose the output of strings from a system. However the combined teaching fails to disclose the function and destination of the output strings. White et al discloses the communication of a slight simulator and a control system, particularly a Flight Management System (FMS), where the FMS is defined as software. Also, "at least one" implies that any one of a vehicle, machine, or system may be used. White et al discloses the use of software on an aircraft which is a type of airborne vehicle. An airborne vehicle is also construed as a machine (e.g. "flying machine"). Therefore, the combined teaching of Hori, Weise, and White et al would have rendered obvious the implementation of a parsing system applicable to a control system, particularly a Flight Management System (FMS), White et al-abstract and page 1 [0002].*

Claim 3 has been analyzed and rejected with respect to claim 2. See claim 2.

6. Claims 5, 6, 8, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horiguchi et al (herein after "Hori") US 6,330,530 in view of Weise as applied to claim 1 above and further in view of Periwal 6,163,776.

Re claim 5, The parser according to claim 1, wherein the multiple symbol objects comprise grammar objects, general objects, control classes, and interfaces.

- *The combined teaching of Hori and Weise teaches that in object oriented program a class describes the rules by which objects will function. Therefore having objects present within a class is a standard operation. A general object is broad enough as to be construed as a grammar object. Grammar objects will be*

construed to contain parts of speech (verbs, nouns, etc.). Since symbol objects are mapped in direct relation to the grammar information, a grammar object is construed as being part of the grammar information or data stored within the dictionaries, (Hori Col. 1 line 32-49). "Interfaces" is broad as to be construed as a standard keyboard or even the parser itself. "Interfaces" is construed to be the parser itself or possibly the external interface. The combined teaching fails to further disclose the relationship between objects and classes. Periwal discloses a system composed of object-relational mapping for grammar and object class definitions within a database, (Periwal abstract). Therefore, the combined teaching of Hori, Weise, and Periwal would have rendered obvious the use of grammar and symbols within an object-class programming scheme applied to an interface.

Re claim 6, The parser according to claim 5, wherein the interfaces comprise an application auxiliary information interface, and an external system interface.

- *The combined teaching of Hori, Weise and Periwal teaches that a supporting database to assist with text translation, (Hori Col. 5 line 32-44). The combined teaching also discloses an output device 126, (Hori Fig. 1). An external system can be an output device such as the one the combined teaching discloses (audio speakers). Therefore, the combined teaching of Hori, Weise, and Periwal would have rendered obvious the concept of a supporting or auxiliary interface in combination with an external system interface such as an output device.*

Re claim 8, The parser according to claim 5, wherein:

the control classes comprise a symbol type list, a grammar and state interface, and a state lookup table;

- *The combined teaching of Hori, Weise and Periwal teaches a user interface for mapping within object-oriented systems, (Periwal Col. 2 line 3-7). When read in light of the specification, a "symbol type list" and a "state lookup table" are not defined. Therefore a symbol type list will be taken to mean a symbol table and a state lookup table will be taken to be relative to a state table as disclosed within the specification. Periwal and Hori disclose number sequence generators that store unique objects in a database to ensure that existing objects will have a unique identification. Since a state lookup table is broad, it will be construed to mean that it is used to track the state of a program dependant on uniqueness, (Periwal Col.6 line 9-21). Therefore, the combined teaching of Hori, Periwal, and Weise would have rendered obvious a control class comprising a group of dictionaries containing symbol information, a user interface, and a state table.*

the general objects comprise symbol objects, number objects, an object list, and temporary objects; and

- *The combined teaching of Hori, Weise and Periwal teaches symbol objects within a linguistic system as well as numbers, (Hori Col. 6 line 16-27). When read in light of the specification object list and temporary objects are not taught. An*

object list will be taken to be a list of any object type and a temporary object is broad and will be construed to be necessary for an object oriented system to function, where data will have to be temporarily stored or pointed to during comparison with a lookup table (indexing).

the grammar objects comprise verbs, conjunctions, prepositions and parameters. *The combined teaching of Hori, Weise and Periwal teaches a method for parsing text where a category of classes exists composed of nouns, verbs, conjunctions and prepositions, Weise [0047]. When read in light of the specification a parameter is defined as a noun, [0064]. Therefore, the combined teaching of Hori, Periwal, and Weise would have rendered obvious within the field of linguistics and object-oriented programming, the description disclosed within claim 8 and the parsing system, a control class, general objects, and grammar objects.*

Re claim 9, The parser according to claim 1, wherein the grammar information and state table is configured to map at least two different user input elements to a single same mapped command object.

- *The combined teaching of Hori and Weise teaches that grammar information and the mapping of objects. A state table is also necessary for a program to run properly (see analysis for claim 1). However the combined teaching fails to disclose the number of user inputs handled and the number of resultant outputs directly proportional to the input. Periwal discloses such detail, where a mapping*

unit exists that has inputs and outputs for object-relational mapping, where inputs are coupled to the object class definition, (Periwal Col. 21 line 15-33). A plurality of inputs implies at least two inputs into the system,. Therefore, the combined teaching of Hori, Weise, and Periwal would have rendered obvious a parsing system where multiple inputs are mapped and sent as output.

7. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Horiguchi et al (herein after "Hori") US 6,330,530 *in view of Weise and Periwal* as applied to claim 1 above and further in view of White et al U.S. PGPUB 20030023740 A1.

Re claim 7, The parser according to claim 6, wherein the application auxiliary information interface is a navigation database information interface, and the external system interface is an FMS interface.

- *The combined teaching of Hori, Weise and Periwal teaches the use of a dictionary and thesaurus as necessary (Hori Col. 8 line 49-56). The combined teaching of Hori, Weise and Periwal fails to teach the FMS interface in combination with a navigation database where there are occurrences of indexing or pointing within a dictionary. However, White does (White et al page 1 [0002]). Furthermore, it is well known and expected within the art that a navigation database is used to navigate among a database or databases. Therefore, the combined teaching of Hori, Weise, Periwal, and White would have rendered*

obvious the designation of an auxiliary information interface as a navigation database for use in the external system of an FMS interface.

9. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Horiguchi et al (herein after "Hori") US 6,330,530 in view of Weise as applied to claim 1 above and further in view of Savell, US PGPUB 20050033586.

Re claim 10, The parser according to claim 1, further comprising:

a partial string buffer configured to hold user input elements until at least one of a mapped symbol object and a mapped command object is formed.

- *The combination of Hori and Weise teaches that a dictionary to reference input data, (Hori Col. 6 line 16-27, Col. 1 line 60-65). The combination further teaches a parser, but fails to teach an existing buffer within the system. Savell discloses an input audio buffer scheme where a buffer address points to the next element in a list. An input mapper also exists where an input channel is matched to an identification channel. When a match occurs, the input data is sent to the audio buffer address, Savell page 5 [0055]. Therefore, the combined teaching of Hori, Weise, and Savell would have rendered obvious the parsing system where a buffer is used to hold or delay user inputs until a mapped symbol object or command object is formed.*

10. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Horiguchi et al (herein after "Hori") US 6,330,530 in view of Weise as applied to claim 1 above and further in view of Pautler et al, US PGPUB 20030185309.

Re claim 11, The parser according to claim 1, wherein:

the input is configured to accept input from more than one user interface device; and

the parser is configured to combine user input elements from two or more user interface devices into a single parsed output string.

- *The combined teaching of Hori and Weise teaches that a parser that accepts input. However the combined teaching fails to disclose multiple interfaces and multiple user inputs. Pautler et al disclose a system where multiple inputs from a demodulator are combined into a single output stream, page 4 [0069]. In order for multiple user inputs to be present, multiple interface devices be necessary. Therefore, the combined teaching of Hori, Weise, and Pautler et al would have rendered obvious a parsing system that accepts multiple user inputs through more than one user interface.*

11. Claims 13 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horiguchi et al (herein after "Hori") US 6,330,530 in view of Weise as applied to claim 12 above and further in view of Lunceford et al, US 5,764,973.

Re claim 13, The method according to claim 12, wherein constraining user input elements comprises:

providing to the user via the user interface at least one of a pick list of valid next inputs, a help message defining a type of valid next input, and an error message indicating a problem with user entry;

- *The combined teaching of Hori and Weise teaches that the filtering of input from the user through the use of syntactic and semantic checks and table/dictionary comparisons. However the combined teaching fails to disclose a message indicating whether a users input is valid or invalid. Lunceford et al disclose a system that accepts user input and compares it to a list within a database. If the input is not found within the database, an error message will be displayed and the user has the option to choose from a list, (Lunceford et al Col. 10 line 43-58). Therefore, the combined teaching of Hori, Weise, and Lunceford et al would have rendered obvious the application of filtering / constraining input strings in combination with a user interface for assistance with valid input selection.*

Re claim 16, The method according to claim 12, further comprising:

inserting, for the user, user input elements when the user does not follow proper grammar; and

prompting the user for a user input element required for a parsed output string.

- *Claim 16 has been analyzed and rejected with respect to claim 13. Lunceford et al discloses that the user must try inputting data again if a selection is not available from a list of appropriate data. A prompt must be present in order for*

the user to be able to enter data into a system. Lunceford et al discloses a user recursively entering data when there is no input match from any databases within a system. Therefore, the combined teaching of Hori, Weise, and Lunceford et al would have rendered obvious prompting of the user for input data in order to apply proper grammar rules. (Lunceford Col. 10 line 43-58).

12. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Horiguchi et al (herein after "Hori") US 6,330,530 in view of Weise as applied to claim 12 above and further in view of Brisson, US 5,678,052.

Re claim 15, The method according to claim 12, further comprising: providing to the user a graphical representation of grammar objects and their relationships to one another that relate to function, semantic restrictions, and default information for auto-insertion or creation.

- *The combined teaching of Hori and Weise teaches that the replacement of words within various strings by use of a transfer module 222 as well as semantic knowledge of a system, (Hori Col.1 line 46-55, Col. 9 line 5-24.). However the combined teaching fails to disclose this system applied to a graphical representation. Brisson discloses a graphical representation of grammar. Brisson also discloses syntax diagrams through the use of symbols and operators, (Brisson Col. 1 line 46-54). It is necessary for auto-insertion or creation to be present within the parsing system in order to constrain input. The creation of new output sentences based on the transformation of old ones takes place in the*

system taught by Hori, (Hori Col. 12 line 10-19). Therefore, the combined teaching of Hori, Weise, and Brisson would have rendered obvious the representation of grammar objects and grammar restrictions in the form of a graphical representation or user interface.

13. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Horiguchi et al (herein after "Hori") US 6,330,530 in view of Lunceford et al and Weise, U.S. PGPUB 20030083861 A1.

Re claim 17, A method for parsing a user-supplied language input and providing a parsed output for an external system, comprising:

- *Hori discloses that a parsing system where a user can input a language and a resultant output is sent to an external system. Hori discloses output devices such as an audio speaker. An audio speaker is a type of external system, (Hori Col. 5 line 10-21).*

pre-processing user input elements as input strings by storing pre-processed strings as an unprocessed string, performing number handling, or processing strings by performing next legal string handling;

processing the unprocessed string by the next legal string handling into a mapped symbol object based on corresponding symbol objects of a symbol table;

- *Hori discloses a source language dictionary. The source dictionary must be pre-processed in order to match input from the user. Hori discloses mapping features*

of words through a morphological analysis. Feature-value pairs such as strings, symbols, and numbers are recognized in an input sentence. Hori discloses legal structures defined by rules in relation to a lexicon (dictionary), (Hori Col. 1 line 50-59). When read in light of the specification, "number handling" is not defined, therefore through the recognition of numbers within a string, it is necessary that numbers be handled, (Hori Col. 6 line 16-24).

pre-processing input numbers by the number handling and adding a number placeholder to a hold object representing a current state of a command object;

- *A number placeholder is not specifically described within the specification, therefore a placeholder will be construed as a part of an indexing scheme, which is necessary when storing data and comparing data. Hori discloses processing where a transfer module aligns words designated as slots until a match is found. Indexing is necessary for processing of this task recursively until a match is realized. The process continues until no slots remain. The state of the program will be updated through indexing, (Hori Col. 13 line 14-21, Fig. 10).*

processing the mapped symbol object that results in at least one of: a) combining the mapped symbol object with the hold object, b) providing an error message to the user interface, c) automatically inserting a conjunction or verb, d) providing the user with a choice list of possible next entry values, e) locating and adding a missing object to the

current state of the command object, and f) adding the mapped symbol object to the current state of the command object;

- *It is necessary to combine mapped symbols elements within the input text with a "hold object". Hori discloses a concept similar to the use of a "hold object", where features of word as well as whole words are able to be stored if grammar rules are met, (Hori Col. 2 line 9-19, Col. 6 line 16-24). However Hori fails to disclose an error message provided to the user interface. Lunceford et al discloses a process where an error message is exhibited if an input data element is not found. In order for the system's state to constantly be updated it is necessary to add or remove elements such as symbols from a source dictionary to input text. The user is also provided with instructions to try again or choose a logical data element from a list of elements, (Hori Col. 10 line 43-58). Hori fails to disclose the insertion of verbs and conjunction specifically. Weise discloses a method for parsing text where a category of classes exists composed of nouns, verbs, conjunctions and prepositions, [0047]. Therefore, the combined teaching of Hori, Lunceford et al, and Weise would have rendered obvious the processing of a symbol in providing an error message to a user, given that at least one of (a) - (f) is a resultant of the processing.*

processing a user entered send command that combines any unresolved mapped symbol objects with the current state of the command object, producing a completed valid command object;

- *"Unresolved" mapped symbol objects is not defined within the specification. Therefore it is necessary for objects that have not been fully mapped to any other mapping portions of a system be unresolved. As each portion of a string is analyzed, the portion will be sent through a grammatical process to ensure a valid output. It is necessary for a system's state to be constantly updated to maintain a valid output. The combined teaching of Hori, Lunceford et al and Weise teaches that a morphological and syntactical generation module where valid sentences are generated after analysis and sent to output as output text, (Hori Col. 8 line 29-56). Therefore, the combined teaching of Hori, Lunceford et al, and Weise would have rendered obvious* the processing of input relative to the current state of a program within a system to produce a valid object.

translating the completed valid command object into a parsed output string; and sending the parsed output string to the external system and resetting the current state of the command object.

- *The combined teaching of Hori and Lunceford et al teaches that a language translation system that produces valid output text and is sent to an external system, (Hori Col.6 line 10-26, Col. 8 line 29-56, and Col. 5 line 10-21). Therefore, the combined teaching of Hori, Lunceford et al and Weise would have rendered obvious a parsing method for processing strings for a valid output using various grammar rules in combination with a user interface.*

Examiner's Note

The referenced citations made in the rejection(s) above are intended to exemplify areas in the prior art document(s) in which the examiner believed are the most relevant to the claimed subject matter. However, it is incumbent upon the applicant to analyze the prior art document(s) in its/their entirety since other areas of the document(s) may be relied upon at a later time to substantiate examiner's rationale of record. A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. W.L. Gore & associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984). However, "the prior art's mere disclosure of more than one alternative does not constitute a teaching away from any of these alternatives because such disclosure does not criticize, discredit, or otherwise discourage the solution claimed...." In re Fulton, 391 F.3d 1195, 1201, 73 USPQ2d 1141, 1146 (Fed. Cir. 2004).

Contact

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vu Le can be reached on (571)-272-7332. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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